

What is claimed is:

1. A gas compressor control device for exercising opening control of a recycle valve interposed in a recycle pipe which returns a fuel gas from an outlet of a gas compressor to an inlet of said gas compressor, and opening control of an inlet guide vane provided in said gas compressor,

said gas compressor control device comprising:

a computing capability unit for computing a recycle valve normal opening command ( $r_1$ ) and an inlet guide vane normal opening command ( $i_1$ ) based on a deviation between a fuel gas pressure ( $P_1$ ) at said gas compressor outlet and a preset fuel gas supply pressure set value ( $P_0$ ); and

a computing capability unit for computing a recycle valve preceding opening command ( $r_2$ ) and an inlet guide vane preceding opening command ( $i_2$ ) based on a deviation between an actual generator output ( $W_1$ ), which is an actual output of a generator rotationally driven by a gas turbine supplied with the fuel gas from said gas compressor, and a first order lag actual generator output ( $W_1'$ ), which has been obtained by first order lag computation of said actual generator output ( $W_1$ ), and

said gas compressor control device exercising:

during a normal operation, opening control of said recycle valve based on a value of said recycle valve normal

opening command ( $r_1$ ), and opening control of said inlet guide vane based on a value of said inlet guide vane normal opening command ( $i_1$ ); and

in an event of a sudden load fall, opening control of said recycle valve based on a value obtained by adding said recycle valve preceding opening command ( $r_2$ ) to said recycle valve normal opening command ( $r_1$ ), and opening control of said inlet guide vane based on a value obtained by adding said inlet guide vane preceding opening command ( $i_2$ ) to said inlet guide vane normal opening command ( $i_1$ ).

2. A gas turbine plant control mechanism comprising:

a gas compressor control device for exercising opening control of a recycle valve interposed in a recycle pipe which returns a fuel gas from an outlet of a gas compressor to an inlet of said gas compressor, and opening control of an inlet guide vane provided in said gas compressor; and

a gas turbine control device for exercising opening control of a pressure control valve and a flow control valve interposed in gas piping which feeds the fuel gas from said gas compressor to a gas turbine, and wherein:

said gas turbine control device comprises a capability unit for feeding an actual generator output ( $W_1$ ), which is an actual output of a generator rotationally driven by said gas turbine, to said gas compressor control

device, and for feeding a load sudden fall signal to said gas compressor control device for a preset period of time when load loss or load rejection occurs; and

said gas compressor control device comprises:

a computing capability unit for computing a recycle valve normal opening command ( $r_1$ ) and an inlet guide vane normal opening command ( $i_1$ ) based on a deviation between a fuel gas pressure ( $P_1$ ) at said gas compressor outlet and a preset fuel gas supply pressure set value ( $P_0$ ); and

a computing capability unit for computing a recycle valve preceding opening command ( $r_2$ ) and an inlet guide vane preceding opening command ( $i_2$ ) based on a deviation between said actual generator output ( $W_1$ ), which is the actual output of said generator, and a first order lag actual generator output ( $W_1'$ ), which has been obtained by first order lag computation of said actual generator output ( $W_1$ ), and

said gas compressor control device exercises:

when said load sudden fall signal has not been entered, opening control of said recycle valve based on a value of said recycle valve normal opening command ( $r_1$ ), and opening control of said inlet guide vane based on a value of said inlet guide vane normal opening command ( $i_1$ ); and

when said load sudden fall signal has been entered, opening control of said recycle valve based on a value

obtained by adding said recycle valve preceding opening command ( $r_2$ ) to said recycle valve normal opening command ( $r_1$ ), and opening control of said inlet guide vane based on a value obtained by adding said inlet guide vane preceding opening command ( $i_2$ ) to said inlet guide vane normal opening command ( $i_1$ ).